

**Water Quality Standards Advisory Committee  
Meeting Minutes**

**July 13, 2004**

**Members Present:**

William Beckwith	US Environmental Protection Agency
Wendell Berry	NH Lakes Association
Phil Bilodeau	NH Water Works Association
Vernon Lang	US Fish and Wildlife Service
Carl Paulsen	NH Rivers Council
Marjory Swope	NH Association of Conservation Commission

**Members Absent:**

Steve Clifton	Consulting Engineers of NH
Michael Donahue	Business and Industry Association of NH
John Dreisig	NH Public Health – Risk Assessment
Robert Fawcett	NH Fish & Game
Tim Fortier	NH Travel Council
Ben Frost	NH Office of State Planning
Nancy Girard	Conservation Law Foundation
Donna Hanscom	NH Water Pollution Control Association
John Hodsdon	NH Farm Bureau
Ken Kimball	Appalachian Mountain Club
Bill McDowell	University of New Hampshire
Eileen Miller	NH Association of Conservation Districts
Peter Rice	NH Municipal Association
Jason Stock	NH Timberland Owners Association

**Others Present:**

Victor Krea	Wright-Pierce
Neil Cheseldine	Wright-Pierce
Chip Chesley	City of Concord
Jim Donison	City of Concord
William Schroeder	Canobie Lake Protection Association
Andrew Serell	Rath, Young & Pignatelli
Anthony Zuena	SEA Consultants, Inc.
Randall Heglin	Town of Jaffrey
Victoria Del Greco	Town of Exeter

**DES Staff Present:**

Paul Currier	Administrator, Watershed Management Bureau
Bob Estabrook	Watershed Management Bureau
George Berlandi	NHDES
Marie LosKamp	Executive Secretary, Watershed Management Bureau

**I. Introductions and Acceptance of May 10, 2004 Draft Minutes**

- **Marjory Swope, Chairperson, opened the meeting at 1:35 pm. The first order of business was the discussion and acceptance of the minutes from the last meeting. Are there any corrections, additions or deletions?**

On page 9 William Schroeder, third sentence, word was *met* and not *amended*.

- **Motion made by Phil to accept minutes as amended, seconded, all in favor, any questions? Minutes of May 10<sup>th</sup> Meeting adopted as amended.**

## II. Proposed Policy for Interpretation of “no discharge” Language and Today’s Version of the Annotated Text for Nutrients and Water Transfers - Paul Currier

With respect to the annotated text for nutrients and water transfers for which there are more proposed changes to *d*; and *e* is proposed to be deleted. This is following on the discussions, and specifically Tony’s points last time, that the rules as written could be interpreted to prohibit water transfers and also the fact that the problem of what to do with nonpoint source discharges in watersheds of Class A lakes and also watersheds of lakes and ponds where nutrients were involved. This policy, and the proposed additional change to the rule language, is an attempt to address these concerns, basically by interpreting statutory definitions of sewage, industrial waste and other waste so that they do not include water transfers and do not include nonpoint source discharges. The two big categories of nonpoint source discharge are stormwater runoff and groundwater seepage. The way we got to that interpretation and the statutory definitions are somewhat hard to follow, but they define those three things and they are quoted here in policy and they define sewage, industrial waste and other waste and discharge is defined separately in our rules. So there are four definitions here, three of which are in the statute and our interpretation of the definition of industrial waste is fairly intuitive and always involves point sources. The definition of sewage is fairly intuitive and always involves point sources. The definition of other waste, I am not sure where it came from, but I think it is a fairly old definition and it appears to apply to *stuff* that is left on or near the banks of surface water, i.e. garbage, municipal refuse, decayed wood, etc., etc. That definition appears to apply to *stuff* that might fall into the water and create a problem. Using that idea or definition of what other waste means, that it is reasonable to exclude stormwater, ground water seepage and water transfers from inclusion in other waste.

### Discussions:

**Carl Paulsen** – If that is the case, how would you handle those other materials that you are talking about because they are not point source and they are on banks?

**Paul** – They are discharges under the definition that occurs in the rules for discharges and are therefore subject to, if appropriate, a DES Permit.

**Carl** – They are discharges when someone places them there? How are they discharges?

**Marjory** – Are you talking about other waste?

**Carl** – Yes, other waste.

**Paul** – Four definitions, three of which occur in statute, the definitions for sewage, industrial waste and other waste. One of which occurs in rules. Let’s go to the rules and read through the definition of discharge. Discharge means the addition, introduction, leaking, spilling, or admitting of a pollutant to surface waters either directly or indirectly through the ground water whether done intentionally, unintentionally, negligently or otherwise or the placing of a pollutant in a location where the pollutant is likely to enter surface waters.

**Carl** – But my point was doesn’t that automatically cover nonpoint source, because that is what nonpoint source is.

**Paul** – Yes, nonpoint sources and water transfers are both included in the definition of discharge.

**Carl** – No, I mean in *other waste*.

**Paul** – No, our interpretation is specifically that the answer to that question is no. They are discharges. They are not discharges of any other category of waste that are defined in the statute.

**Carl** – One other question, it is not clear to me how other waste is different from sewage, and it seems to me since they are used in the statute originally sewage or waste. Waste is defined as industrial or other, then it seems to me that they intended to include nonpoint source in the statute.

**Paul** – Our interpretation is the answer to that question is “no”.

**Carl** – So you think there is a difference between that other waste and sewage?

**Paul** – Sewage is a separate definition.

**Marjory** – Other waste is essentially solid waste or some sort or another I think. Most of that list is solid waste.

**Wendell Berry** – What about agricultural waste, agricultural materials?

**Paul** – Such as?

**Wendell** – Industrial waste, manure, fertilizer, offal, would they be industrial waste or otherwise.

**Paul** – First of all manure is not in itself a discharge. In general you need rain on manure to create a discharge and in general that is a nonpoint source discharge. You could interpret that manure is one kind of offal. Although I think offal is usually slaughtered animal guts.

**William Schroeder** – Do we have regulations that prohibit farm animals from being in waters of the rivers and lakes?

**Paul** – Yes

**William** – We do.

**Paul** – And as a matter of fact, we have nonpoint source grants that we give to farmers to fence waterways and to provide an alternate means of water. I am not sure that there is a statute which says animals are not to be watered, but there is a statute which says there is a bacteria standard in the water and the presumption is that if the animal is in the water that the bacteria standard in the vicinity of the animal is compromised.

**Carl** – I am sorry to harp on this but I am concerned about this being a bigger change than just to address this one particular situation, and so it really is important to me that I understand how it would work. It seems to me that all of those other wastes refer to things that are not in and of themselves discharges until they fall, so they are therefore nonpoint source based depending on what you were talking about before. I still am having a hard time understanding how this is going to affect point vs. nonpoint source discharges other than just transfers.

**Paul** – You are correct. This is one way of clarifying the very ambiguous words about prohibitions on increased nutrients to tributaries of lakes or ponds. What could be interpreted as a prohibition of all human activity in the watershed of Class A waterbodies, which I think we have discussed before and I don't think there was any disagreement that this is not a reasonable interpretation? I think we were agreed that the interpretation of the WQ standards such that human activity would need to cease in the watersheds of a Class A waterbodies is not a reasonable interpretation. This creates a reasonable interpretation by taking literally the definition of other wastes. Other wastes are exactly what the statute says they are.

**Vernon Lang** - Paul, I have much the same problem as Carl has with that. When I read the statutory definition, there shall be no discharge on any tributaries or lakes in the waters in this classification. It doesn't seem to me that the word no is ambiguous, it is pretty clear. It seems like the statutory definition of waste is pretty inclusive with the words, *any other substance harmful to human, animal, fish or aquatic life*. Even nutrients in excessive quantities are harmful. So it has to include nutrients. I think the trouble is that if you take your proposed policy what it says is it would effect change to the statutory definition where it would say there shall be some discharge.

**Bill Beckwith** – But not enough to cause cultural eutrophication.

**Paul** – No that is not what we are doing at all. What we are doing is creating four classes of discharge, industrial waste, other waste, sewage, and non waste. The prohibition is on the discharge of sewage or waste.

**Vern** – You seem to be making a distinction between point sources and nonpoint sources. Why didn't the legislature just simply say there shall be no discharge of in point source discharge if that was what their intent was?

**Carl** – Have you looked at the legislative intent to try and clarify this at all?

**Paul** – No, I am not sure there is a record.

**Carl** – It does seem to me, as Vern but it that 485A.8.i says, no discharge of sewage or waste. Waste includes industrial or other waste and other waste as you pointed out means, refuse, etc.

and chemicals and other substances. It seems to me, I don't see how you can blanketly say that it means that it doesn't cover nonpoint source discharges. I am not making that through.

**Paul** – You are certainly aware that there are plenty of other provisions in the WQ standards that cover nonpoint source discharges. We will get to some of that looking at the antidegradation provisions. There are plenty of other opportunities for regulation of nonpoint source discharges in the rule. This interpretation, which creates four classes of discharges, three of which include sewage and waste and one that doesn't, gets around the inconsistency which would lead one to believe that human activity in a watershed of Class A waterbodies is not allowed.

**Bill** – It is allowed just with no phosphorus.

**Paul** – Basic premise all human activity that changes the landscape in any way results in a discharge of phosphorus. The not one single molecule might be added. If no discharge means no discharge, then...

**Bill** – I am not following this. You are saying that you believe it was the state legislators' intent when they passed this that in Class A watersheds there would be no development whatsoever.

**Paul** – No, specifically we are saying that was not the intent. We are saying that the intent was that no discharge, at the time it was written, when point sources were the focus of the Clean Water Act and state activity, the focus was point source discharges. There shall be no new pipes discharging either sewage or industrial waste into surface waters and further more there shall be no more dumps on the banks of rivers such that what you don't want is put over the bank so that it becomes your downstream neighbors problem in the water. Those are the things that we believe the legislature specifically intended to address. The fact is that nonpoint sources were added later to the definition of discharge by rule. They were not added by the legislature. I think you will find that it is correct that nonpoint sources were not in the statute and they were created and added to the definition of discharge by rules and not by the legislature and that is how we got to where we are with this seeming inconsistency.

**Bill** – I am inclined to agree that probably the intent of statute was thinking about point sources at the time, but not probably where and if you could debate probably is not just point sources but point sources with regard to their potential impact to the water to the extent that you have nonpoint sources that would have the same affect as a point source. I think you could argue that the statute intended to be not to on one hand prevent point source but on the other create the same problem by virtue of allowing nonpoint sources. Presumably that would be your basis for amending by rule the definition of discharges to include nonpoint sources. You have to have some statutory basis to do what you do in rules. Obviously the statute would have wanted us to prevent the same insults from occurring via point or nonpoint source and therefore by rule we can amend this definition.

**Paul** – I think that is essentially correct and that is what we did. The definition of discharge includes NPS and what that means is that NPS are regulated under the WQS. Somebody who creates a NPS cannot say you cannot use the water quality standards to cause me to implement Best Management Practices or to allocate a load to it and require me to reduce that load under a TMDL. NPS can be regulated and we are not touching that, but what this does is to get us out of the inconsistency of having a prohibition (on NPS in watersheds of lakes).

**Carl Paulsen** – Can you talk about how this applies to the situation where you have some NPS discharges to a conveyance of some sort and that ends up as a point source into the lake because that was, you know, a piece of the discussion at some point and I am still not sure how this addresses that issue.

**Paul** – Specifically for stormwater, this policy says that stormwater is not a discharge of sewage, industrial waste, or other waste.

**Carl** – You still end up with a point source discharge.

**Paul** – Right

**Carl** – That is in violation.

**Paul** - No

**Carl** – Well that is what I am trying to understand. Clearly I am seeing that it might have but you are not, so I am trying to see why you are not seeing it.

**Paul** – What we are doing is we are interpreting that stormwater does not come under the definition of other waste.

**Carl** – In other words that conveyance, whatever it is, is considered only stormwater and it is not a point source.

**Paul** – No, it is still a point source; it is just not a discharge of sewage, industrial waste or other waste.

**Carl** – But it is a point source so it gets covered by the point source piece of this. If it is a point source, it gets covered by *d*.

**Paul** – No, treated or untreated industrial waste or sewage (is covered by *d*). There should be no point discharge of treated or untreated industrial waste or sewage. There can be a point source discharge if it is not treated or untreated industrial waste or sewage.

**Carl** - I understand now, thank you.

**Paul** – This is good. I wanted everybody to be clear on what we are doing here because as Carl said this is an important point and makes moot the point of cultural eutrophication. Basically we have taken those words out so that we don't have to make a decision about whether or not a discharge contained phosphorus and nitrogen is causing cultural eutrophication. The basic reason we did that is we could not figure out a quantitative way of making that determination. In order to apply those words to any specific situation, we have to have a quantitative way to do it.

**Anthony Zuena** – So Paul when I printed all of these documents on Friday, I actually printed 2 different versions of 1703.14 nutrients. One contained paragraph *d* and one did not.

**Paul** – That is a mistake. The correct one is the one that is on one page and the heading is Proposal for Nutrients and Water Transfers incorporated. The other one which doesn't have the words for Nutrients and Water Transfers is not the correct one and you should cross out the section on nutrients and the section on transfer of water in this version that does not have those words in it.

**William Schroeder** – The one that begins with turbidity.

**Paul** – Correct.

**Marjory** – You cross out 1708.12 which is transfer of water supplies and then there is nothing left on page 2 as we have deleted it.

**Paul** – The intent here and what we are doing is separating the proposed rule change that deals with transfers and nutrients from the proposed rule change that deals with turbidity and flow based permits, or criteria for establishing discharge permits. We are keeping them separate.

**William Schroeder** – In your conversation just a moment ago it looks like it is next item to be discussed revised draft rule language transfer and nutrients. You mentioned the business about cultural eutrophication and you appear to have deleted item *e* which used to be there which talked about no increase in point or nonpoint source....

**Paul** – Right and made changes to *b* as well.

**William** – I was concerned about that. I think that *e* should not have been eliminated. Do you want to talk about that now or do you want to finish up the policy.

**Paul** – Are we finished with the policy?

**Vernon Lang** – Just one question, on the policy if you have a proposal to transfer water say from a river to a lake, and the river has one or more discharges of sewage into it through municipal sewage going into the water, does that fall under this?

**Paul** – No, once the discharge is mixed and once it is outside the mixing zone, if there is a mixing zone incorporated into the permit, then it is surface water. The same holds for groundwater: groundwater can include things that humans put into it. It remains a NPS discharge and not a discharge of sewage, industrial waste, or other waste.

**Carl Paulsen** –What if it is in violation of some water quality standard?

**Paul** – There is nothing here that touches the water quality standards. If there is a violation of WQS, and a load allocation is necessary or a waste load allocation, then both point sources and nonpoint sources are included in that process that would include stormwater, groundwater, transfers, anything else that exerts a load to that particular pollutant on that particular waterbody, then that is not affected in any way by this change.

**Carl** –I am trying to remember how transfers are handled. I need to take a look back at that language to see how that works. Just wondering if you have a waterbody that is in violation, eco concerns relating to a Class A lake and so I just want to think about that a little more.

**William Schroeder** – As I understood it the purpose of this policy statement was to try to deal with the specific language that occurs one place about no discharge of sewage with waste and the concern was, and people were wondering, how broadly is that defined? Would that include stormwater runoff or groundwater, or would that include transfer of water from one waterbody to another. And you are trying to say no, that is not sewage.

**Paul** – That is right.

**William** – And that is kind of what you say in the discussion piece in the middle. So you are not trying to change anything else, you are just trying to say, *that is not sewage*.

**Paul** – There is no outright prohibition of those.

**William Beckwith** – Even if there is sewage in it.

**Paul** – Even if there is sewage in it.

**William Beckwith** – So there is a CSO and treated upstream, you think the intent of that language with regard to prohibiting certain things intending that it would be interpreted that water that is subject to receiving CSO waste could be transferred to a Class A water supply.

**Carl Paulsen** - That was my point.

**William Beckwith** – It just keeps coming back around. It is a little hard to imagine it.

**Paul** – You have all the other provisions of the WQS that come into play. Remember that transfers have to get NPDES permits. So there has to be a certification that the proposed discharge would meet the WQS of the receiving water and the antidegradation provisions have to come into play. So all those things would apply and the answer to your question is yes. Water that receives a CSO or any other discharge in surface water and taking that water and putting it somewhere into another waterbody is not a discharge of sewage, industrial waste or other waste outside the mixing zone.

**William Beckwith** – I think they are separate questions whether or not water quality standards, aside from a prohibition of specific kinds of discharges, can be implemented to protect uses otherwise assigned to a given waterbody on a discharge proposal. That is really a separate question from whether or not the statute would intent to be interpreted as such that CSO waste would be by virtue of some loop here going to Class A water supply, I am sure our water supply people, independent of this program, would have some concerns. It is kind of inconsistent. If you were to try and prevent CSOs from being in the general watershed of most water supplies, particularly Class A, as opposed to the Class B waters that are used for water supply and then turn around and pull them in from another watershed. I understand what you are trying to do; I just am having trouble with a straight face.

**Paul** – That in fact does occur, Pennichuck water works.

**William Beckwith** – There is also violations of permits that occurs.

**Paul** – The City of Nashua routinely drinks treated water that has come from a water body that receives CSO discharge.

**William Beckwith** – And my guess is that the current law could easily be interpreted that the intent would be the Clean Water Act and the state statutes and the Safe Drinking Water Act that the direction we would be trying to go in, would be getting away from that.

**Paul** – I would think that it would be fully reviewed in the antidegradation review process. I think it would be a very reasonable argument to say that a discharge of waters that receive CSOs to a highly pristine water supply water body would be degradation and you have to have social and economic justification so it would all come out on the table in that process. In fact, it should come out on the table in that process and I would expect that the result would be a decision not to do it. There is a process for that and the process is not outright prohibition.

**Vern Lang** – Paul, that same example that Bill has given, if you have a CSO discharge and you have along with the oil, grease, chemicals and bacteria going into water, why doesn't that fit under this definition *and other waste and any other substance harmful to human, animal, fish or aquatic life*? It seems to me that it fits right there, it seems to me that you are trapped with this definition. I don't think what you have is workable.

**Paul** – What we are saying is that those words, any other substance harmful to human, animal, fish or aquatic life that is a catch all phrase and the intent of that is to make sure that other things that are similar to the rest of the list are not inadvertently excluded. If you look at the rest of the list, it is stuff that one would dump over a bank and that is the interpretation.

**Vern Lang** – I don't see it that way at all. It seems to me that the plain reading of it is that there is not a lot of discretion there. The words *no discharge of any*, and you are trying to include there shall be some discharge.

**Paul** – No, there shall be no discharge of any of the things that fit the definition of the statute. What we are doing is we are refining the definition of the statute in a way that is consistent with the rest of the rules where we have discharges that are not those things that are under the statute. It doesn't take away the regulation of those discharges that are not found in the statute, and it just takes away the outright prohibition. It also embodies current practice in which we have in fact for as long as these words have been around never applied them as an outright prohibition of stormwater, groundwater seepage or discharge of surface waters that have in fact received some waste at some point. This policy will in fact, I think, write down what has been a state practice.

**William Beckwith** – I am just cautioning, what you are saying there to me, given what I think may be a reasonable ultimate legal analysis of this is that somebody who discharges or violates their permit. It is the same as saying somebody who violates their permit is evidence that the system that intends that you get permit limits that you are not supposed to violate and therefore enforcement action is subject and doesn't really work that way, violations of permits are okay. I do not believe that the structure of Class A in your statute intended that you would interpret it in such a way to subject those waters to receiving the same kind of waste that are otherwise prohibited via a direct discharge. You are right, you have the other provisions in your standards with regard to uses and criteria that can be used to control any kind of activity that might be proposed to occur, but then you have on the top of these express prohibitions...

**Paul** – I guess what I would propose is that if there is another scenario that reconciles the 4 definitions, and makes a clear interpretation of how stormwater, groundwater, seepage and transfers are to be handled; we certainly would be willing to entertain it.

**Carl Paulsen** – I didn't get a chance to open the WQS and do a words search for wastes, but can you talk about other places in the standards where that term is used and whether or not this change would have impacts that we are forgetting about here. That is one of my biggest concerns is aside from this, where else might this change have ramifications and the changes affect other standards. Again, I didn't have a chance to do a very thorough review, since I got it so late.

**Paul** – We will check it out.

**Carl Paulsen** – That would be very helpful for my comfort level.

**Paul** – I think we will move on to cultural eutrophication which really goes along with the policy change. Basically having been unsuccessful in being able to figure out a way to quantitatively interpret discharges containing phosphorus and nitrogen that would contribute to cultural eutrophication to lakes or ponds we have proposed to strike the words.

**William Schroeder** – I am concerned about that and I know we have talked about that at lengths before about contributing to cultural eutrophication and how restrictive is that going to be and so forth. I don't think that striking the language altogether is the right way to go because I think that the reason that the language is in there in the first place is we don't want cultural eutrophication to happen. If you eliminate the wording it just takes it off the table as a concern. If you leave the wording in there, then it is clear that cultural eutrophication is a concern and we don't let it happen. On a case by case basis you will have to deal with is this particular activity going to contribute to cultural eutrophication. I think it has to be dealt with on a case by case basis.

**Paul** – We have no idea how to deal with it. The problem basically is and I have done a google search, and cultural eutrophication is a very commonly used term. Conceptually we all understand what it is but I haven't found anywhere where it is quantified except in obvious cases (such as) where a lake turns green and then it is due to the agricultural fertilizer. The classic cases that I found on the web are the lakes in Wisconsin which were heavily eutrophied and heavily studied by the University of Wisconsin. In order for language in the rules to be worth anything we have to be able to take that language and apply it consistently to a variety of situations and come up with an answer. In this case it is another prohibition. So we have to look at a particular situation and decide whether or not the prohibition applies. And we get right back to the same problem, where any human activity is either a new or increased discharge for phosphorus. You change the land cover, you increase the export coefficient. Chances are if you change the land cover, if it was forest and you change it from forest to anything else, you will increase the export coefficient and you will increase the amount of runoff. The runoff curve number if you are using SCS. If you do it on a small lot the result of the increase will be small and if you do it on a large parcel the resulting increase will be large. The question that we have had to answer in that case is at what point does it contribute to cultural eutrophication and we do not know how to do that, and haven't been able to figure it out.

**Carl Paulsen** – I do agree though that it seems a little bit haphazard to just define a land that catch basin for that problem because you cannot define or you cannot pin it down. To have nothing there aside from what you say with the 401 and I am not as confident in the 401 and its process as you seem to be. But that aside, it seems like here is an important concept as difficult as it is to implement with any kind of predictability, it still seems like it is an important concept that is missing. I don't see where phosphorus is addressed in the WQSs and so how do you deal with this issue of there is phosphorus from nonpoint sources, how do you retain some measure of control over that, some mechanism by which you can force the NPS or do whatever.

**Paul** – I think the answer is in fact the antidegradation process which is what we would like to take up fairly intensive as to the next subject for the advisory committee.

**Carl Paulsen** – At the very least I would be reluctant to sign off on something like this without knowing what the antidegradation approach is going to be and what changes are going to happen there. To me it is a package deal at the very least.

**Paul** – I think this is a true statement, that these words have never been used. I polled Bob Estabrook's memory and George's and we have never used them. These words have never been used in decision making by the department. Why? Because we don't know how. So words that are there but we never use, they never have an affect on any activity in the watershed of a lake or pond, are words that give you a false sense of security. I would argue that you don't want a false sense of security. You don't want to say, ah! the lake or pond is protected because there shall be no increase in discharges that results in cultural eutrophication.

**Carl Paulsen** – I agree, but leaving them in doesn't diminish your ability to use 401 or antidegradation or TMDL or any of those other provisions. But what it does do is that it says to me as an advocate of waterbodies, it allows me to take a look at a particular activity and say, does this make any sense, and if it is a clear case, then I can at least point to that and say wait a minute you ought to be doing internal methods because of this provision.



**Paul** – I guess my argument would be that this is not where those words belong they belong in a purpose statement in legislation somewhere. The purpose of rules is to amplify and implement statutory provisions quantitatively and precisely so they can be applied unambiguously to specific situations.

**Carl Paulsen** – How would the statutory language help you then unless you can turn it into rules, I don't see...

**Paul** – That is right. We would still have to create a process by which we implemented those words. We could do it any variety of ways. I would submit that all of that exists already. It is there. We have enough statutory intent to go around things like that and we have an antidegradation process that is full of words like that and that is the place it should be.

**Carl Paulsen** – I want you to understand that there is a comfort level here that you are not getting from me or others as well. I might be willing to say yeah if you can pass out a statute, a bill next year that puts that language in the statute then remove this language from the rules, then I might go along with that. But we don't have that language presumably, I haven't looked that closely but so failing that it provides me some comfort whether or not it is real.

**Paul** – I guess I would throw out the challenge to anybody that wants to, if anybody can come up with a quantitative way to apply those words to a specific situation, we would be glad to entertain them.

**Tony Zuena** – Two thoughts. We have had this debate for 2 years now. I think the intent you are trying to accomplish is to allow a prospective water supplier to at least begin the analysis at which point this debate can be had with facts in place. Absent from removing that, there is no reason to start, because it is a lost argument from the day you start. Second point, I want to be clear as to what this body's purpose is. It is my understanding that it is not a democratic process. You are here to receive comments, but in the end it is DES's decision as to what to do.

**Paul** – Yes, and I think we are fairly close to a decision as to what to do, which is why I offer, and I think this is the function of the body, is help us. We have a problem here in that we do not know how to apply the words cultural eutrophication to a specific situation. This means, the rules do not work. We have after lots of consideration and discussion a proposal on the table to take the words out because we have not been able to come up with a way to make them work. My request to the committee is, if you have a way to make them work, write it up and send it to us and let us discuss that and in the say way with the interpretation of definitions of sewage, waste and discharges.

**William Schroeder** – I have a suggestion and I will write it up and send it to you.

We have a situation where there is some activity proposed for a Class B lake, some whether it is a discharge, a water transfer, some kind of activity which is going to introduce additional phosphorus into this Class B lake.

**Paul** – A big house on Winnepesaukee.

**William** - If the existing uses, suppose that the amount of phosphorus to be introduced is not trivial and it is clear that it will result in enough additional phosphorus in the waterbody that it will contribute to cultural eutrophication but it doesn't violate any of the existing uses of that waterbody, it would be permissible. If you strike these words and you do an antidegradation review and you say this is a Class B and we aren't trying to keep it close to natural, all we are doing is making sure that when we get done with this activity, we will still be able to do all the designated uses and the designated use will not be prevented by having this cultural eutrophication take place, so it is okay.

**Paul** – Well no that is not what antidegradation says at all. Antidegradation, and we will get into that, is basically 3 tiers. The first one, tier 1, is to maintain the existing designated uses. Tier 2 which most of our waters fall in which are waters that are of quality that is higher than necessary to just maintain the designated uses. Basically tier 2 says that the higher quality shall be maintained. So if you a development that is going to produce lots of phosphorus, the standard

will not violate the WQS but it is going to cause an increased phosphorus level and increase in primary productivity in the watershed. That is fully in the preview of antidegradation of tier 2 waters.

**William Beckwith** – But Paul it is, but tier 2 doesn't require that you maintain the high quality of the water. In fact tier 2 requires that you accept for where you waive it through some insignificant finding which is not trivial. It requires you to go through a decision process that justifies the lowering of WQ that is going to occur and does allow you to go right down to the minimum necessary to protect designated uses.

**Paul** – Yes, you are absolutely right and that is where we want to go I think is to use and enhance the use of the antidegradation process so that there is a public forum for making those decisions if in fact there is a good social and economic reason to make WQ worse, but not to violate WQS, then the antidegradation process creates a public forum to make that decision, document that decision and get on with whatever it is that is proposed. That is exactly the process.

**Vern Lang** – Just one more point, I want to make sure I understand the changes to subpart *d* in the nutrients. In your prior conversation you said that stormwater is not sewage, waste or other waste. So the way I would read this *d*, the way you have it, it is a freebie for anybody that has a stormwater discharge to going into a lake or pond and it wouldn't any longer cause violations of nutrients according to the way this is set up. Is that your intent?

**Paul** – Yes, that basically is exactly what happens now. There are no BMP water quality requirements on stormwater discharges.

**William Beckwith** – Then where is antidegradation going to come in. You are deferring all of this to well antidegradation will pick it up. What is your mechanism for implementing antidegradation if someone is going to build a big home?

**Paul** – There isn't. For instance I would presume we could, as part of our antidegradation decision, place requirements, BMP requirements, on certain activities in a watershed including the proposal to change land use and discharge more phosphorus. We could say we can change the land use but you have to put in BMPs such that you calculate the estimated increased load of phosphorus from changed land use and you treat that using nonpoint source BMP methods to the point where that loading from the landscape is no more than it was before you cut down all the trees and put up condominiums or whatever in the proposal.

**William Beckwith** – In speaking from ignorance of what actually happens and doesn't happen in the state right now upon implementation, some of these provisions you have been saying well we don't implement them anyway. What is the current status with regard to implementing the antidegradation in this manner that you are suggesting would kind of backstop removal of some of this other language which doesn't get implemented any way? Is this a new initiative required by the state or is this a fit because it is being addressed in antidegradation implementation now and some of the other language is redundant.

**Paul** – No, the antidegradation process that I just talked about would be not a new process but it would be a new and increased use of the existing words in the antidegradation rules. We don't do that now, we haven't been asked by anybody and we haven't had any applicants.

**William Beckwith** – You have development on your lakes, right? You must have new homes going up around a lot of your lakes.

**Paul** – So they tell me.

**William** – Okay, you seem to be suggesting that potential loadings from that would be addressed through antidegradation. Now you have just said we haven't had any requests. What is the mechanism to invoke that activity needing to go through your antidegradation review?

**Paul** - We will have to talk about that, I am not sure. That is a good question. There are a variety of mechanisms we might use.

**Carl Paulsen** – The other piece is when is the opportunity to evoke that? Is it only at the permit stage or is there some other point as well?

**Paul** – What we would like this Advisory Committee to do is to work through that stuff. I don't think we would propose to change the words in the antidegradation rule, we are proposing to develop more detailed ideas of how those words would be applied.

**Carl** – Lastly, it would certainly be my suggestion at the very least that you don't adopt any of this language until you can at the very same time as a package deal adopts the antidegradation assuming that is able to be worked out. Here you are rolling back a potential tool even though you say it hasn't been used, but it is a potential tool without replacing it with something. We are here and we are going to be either here or better in water quality and I am not seeing that coming out of these changes yet.

**William Schroeder** – Agreed.

**Paul** – Let's see how fast we can move on the antidegradation. You may be right.

**Anthony Zuena** – Are we going to comment on the issue of transfers 1708.12?

**Paul** – Yes, there haven't been any changes.

**Anthony** – Well I have a question and it is not a new question. We have talked a number of times about defining aquatic life. I am wondering if you have made any headway. So much of this section is pinned on those two words, but I haven't heard a definition that is quantifiable.

**Paul** – I will verbalize my impression. It is my understanding that it is sufficiently doable so we may not need further definition, but that may not be true. Aquatic life is anything that lives in the water, and what we do by convention, by long established convention is we pick assemblages - fish, algae, macroinvertebrates, macrophytes, and we look at them and count them and we enumerate species and such. We put those all together in aquatic life, but we usually focus on a particular assemblage.

**Anthony** – I think it is important that at some point that definition gets articulated because maybe at the risk of misstating something Vern said many, many meetings ago, you could be defining that at the molecular level on a thing that we don't even know yet and that is what scares me.

**Paul** – Another definition, for instance if we were to evaluate aquatic life we would pick assemblages and we would pick some metrics. We would say did the metrics change in a negative way then if they did then aquatic life is adversely affected. Likewise with respect to toxic constituents, we would consult the literature for lab tests, some more sensitive organism and did more of the organisms die. Using standard lab tests for toxicity did you get a more toxic result? We would use results from those kinds of tests to make a determination that aquatic life has been adversely affected. I think that those methods, especially the toxicity tests, are fairly well established. We have enough experience with biological metrics so we know that we are confident enough to do it. We have done it for wadeable streams.

**Carl** – I have some concerns about that section. I was at some point going to make some suggestions, but I am wondering if this is going to end up being the same problem as cultural eutrophication. Sometime down the line, say five years from now, we could be wrestling with it over this wording, making the same sought of comments that it is never used because we don't know how to implement it, etc.

**Paul** – The answer is we implement all the time.

**Carl** – This particular wording?

**Paul** – Yes, a specific designated use in the water quality standards is aquatic life use support. We are charged with assessing waters for aquatic life use support. We have a core of parameters for assessment methodology which specifies exactly how we do that. We have conducted several studies, upstream and downstream studies, the literature is full. We do it, lots of folks do it, and look at biological methods upstream of our discharge or something or other which is affecting aquatic life and look at the biological methods downstream and you see if upstream is better than downstream. I have confidence that the body of literature which supports those words is robust enough so that we can apply that to any particular situation that you can come up with. I am highly confident.

**Carl** – I just don't understand the metrics of adversely affect.

**Paul** – If metrics downstream are in the less desirable way worse than the metrics upstream, that is an adverse affect. If more organisms die in the toxicity test under this condition, that is an adverse affect. There are error bars on all those things that I just stated.

**Jim Donison** – They probably had this point of discussion before, but how are you going to apply this new rule to existing transfers? Existing transfers that have been going on for twenty years plus whether it be Concord, or whether it be Canobie Lake, whether it be Pennichuck or any other communities, how would this rule apply to them?

**Paul** – It would apply. Water quality standards apply to water quality and basically there is no grandfathering.

**Philip Bilodeau** – I specifically recall in this other rule, maybe within the past 12 months, you stating that the existing transfers that are currently taking place would be grandfathered.

**Paul** – There is going to be no action to stop those. We pledge to help the existing water transfers with the NPDES permit process when we get to that point. You have to comply with water quality standards.

**Philip** – So then the term grandfathering is as ambiguous as cultural eutrophication.

**Paul** – In truth grandfathering doesn't apply. It is not applicable to water quality standards. If, for instance, you have a water quality that doesn't support aquatic life, and you say well, it has always been that way, you cannot use that as a justification for continuance of not complying with water quality standards. No transfer can result in the receiving water violating water quality standards or the donor water violating water quality standards.

**Jim** – So what is going to be the mechanism that initiates the implementation of these rules? Obviously things have gone on for 20 to 25 years, status quo is continuing, what will trigger the decision to say well grandfathering (even though that word cannot be used) can continue?

**Paul** – What I think we have said is that when we get the words worked out work we would work with the water suppliers to figure out a process for doing that. Basically for going through the NPDES permit application process. I think we had said that for existing discharges, it does say that we might determine that they are not new or increasing, it still has to be worked out, but antidegradation review would not apply.

**Jim** – Antidegradation would not apply for systems that have been transferring for a number of years, is that what you are saying?

**Paul** – I think that is what I may have said.

**Philip** – A lot of words have passed.

**Paul** – But you would be prepared to hold us to that.

**Philip** – I was prepared to hold you to the grandfathering.

**William Beckwith** – Well existing use protection would.

**Paul** – If there is a proposal to change it, you have to increase the volume, but the NPDES permit application is continue something that has been going on for the last fifty years, forty years or whatever, that would not be subject to antidegradation review.

**William** – But it wouldn't be a new or increased discharge, it could be an existing usage, you could have an existing use, by the legal definition, it wasn't attained today because of the transfer.

**Paul** – That is correct.

**William** – The thing is this existing use protection....

**Paul** – For example, Penacook Lake is listed for excessive algae growth, so sooner or later Penacook Lake is going to need a TMDL to figure out how come it has excessive algae growth, and if it turns out it is a function of phosphorus that comes from the Contoocook River, well the transfer is in play as far as the allocation of phosphorus loading.

**Anthony** – I was going to make that point that it might be a little bit somewhat semantics to apply for that NPDES permit as vague as it is, and it seems to me you would have to do

something akin to an antidegradation review, maybe under another name, but some kind of an analysis would have to be done.

**Paul** – We will have to do a 401 certification on the water quality on the NPDES permit which means we the state will have to certify that the discharge resulting from the permit will not result in violation of water quality.

**Anthony** – Okay and just a further refinement, that notion of existing transfers having come into compliance once the words are finalized. If I am hearing all of this correctly that applies to whether or that receiving water is an A or a B.

**Paul** – That is correct.

**Anthony** – Okay, so the B is not the escape hatch here?

**Paul** – That is correct. Transfers need permits and that is what the judge said.

**William Beckwith** – That is the mechanism then for these existing, I didn't realize that they are not permitted now, so the mechanism you would be looking at standards whether it is new or revised or the old standards would be the permitting process. So you are going to hold me to getting a permit, this review of whether the discharge meets standards.

**Marjory** – Isn't that what the Loon case was all about.

**Paul** – No, the transfer to b permits was the Loon case and I believe the Florida case, where they want to take the stormwater and put it in the Everglades is a similar issue and with the same results.

**Anthony** - Supreme Court apparently just ruled on that in the last couple of months.

**William Beckwith** – I thought the question then what is the mechanism to look at these non grandfathered transfers regarding the standards and one mechanism is if they are going to start permitting them, and you currently haven't permitted them, then that is a mechanism of the standards. The issue of permitting for the discharge, they are doing a certification that the discharge will meet the standards and to do that they have to review your activity consistently.

**Jim Donison** – This might be going off the subject but 25 years ago DES approved the transfer the construction of the pump station to pump the water from point A to point B. So, could it be implied that was an approval at the time? That was the question.

**Paul** – I think that is a correct statement. It was an approval at the time. However, water quality standards have to be met. If we change the water quality standards then everyone has to meet them.

**William Beckwith** – Well I mean, permittees upon re-issuance are permanent, often see changes from the permit that was approved previously.

**Paul** – There is still no hurry on issuing NPDES permits to existing transfers.

**Wendall Berry** – I want to go back to something I said earlier, what I see here is we have conflicting policy again. We have policy that these rules cover rather than to water quality standards and we have another policy that is involved with the transfer of water for water supply needs. You said well rules don't work, and I took that to mean in terms of getting to yes on water transfer. I would suggest that they probably do work, they don't get to the yes, however, in terms of the transfer of water when and where you need to do it. Are we really going down the right path to try and manipulate our science so we can get to yes when we need to at the expense of water quality standards rather than looking for a different set of policy approaches to deal with social and economics of water needs when we need it..

**Paul** – Well I think there is no difference, as Bill has pointed out, ambient water quality standards are water quality standards. They are the same whether you are transferring water from some place or whether you have a nonpoint source discharge, or whether you have a point source discharge of waste, water quality standards are water quality standards. What we are trying to do is get a process that does exactly that. That creates the ability to consider all kinds of discharges including transfers in light of the water quality standards.

**Wendall Berry** – In doing that we have to be prepared to accept that in some cases the answer is going to be no.

**Paul** – Absolutely.

**Wendall** – Are we all comfortable with that and that this is one of the outcomes. That is not the rules not working, that is the answer is no.

**Paul** – And previously the answer was always no.

**Wendall Berry** – That is a hell of a way to go around the policy of what these rules are set for and doing it anyway.

**Paul** – I don't think so. I think discharges must meet water quality standards and they must meet antidegradation. We are dealing with this and this is a good segway into Bill Schroeder's comments which I think deal with that issue. Both those things have to happen. The water quality standards have to be met, or the criteria I should say, that is one part, designated uses criteria to support the uses and antidegradation are the three legs of water quality standards. Criteria must be met, that is "none unless naturally occurring" for example for Class A for some constituents and antidegradation has to be met. Bill's point was that using a statistical method in a 25<sup>th</sup> 75<sup>th</sup> percentile of reference condition, would allow degradation. That is true. I think the point I want to make is that we need to separate those two. We are making one determination: does it meet the water quality standards and in this case if it is a proposed discharge to Class A waterbody would it result in falling outside the 25<sup>th</sup> or 75<sup>th</sup> percentile, in which case the standard would not be met and then we ask the second question "is there degradation". For example, if you had real clear water and real colored water a discharge into it results in greater color in receiving water would be degradation. We would ask the question is that degradation and if the answer is yes, then we have to do an antidegradation review and ask if there is social and economic justification for it.

**Carl Paulsen** – The second question is going to segway into antidegradation. Following that point I am trying to conceive of how and why are we treating transfers differently than a discharge, say for instance a discharge as phosphorus that is much greater in the receiving water body as in the Canobie Lake situation where the transfer has lower phosphorus itself but it is not allowed. At least that is what I thought was the motivation here. But in that particular case, I am trying to rest that situation, why would that same logic not apply to a point source discharge.

**Paul** – Transfers are a point source discharge.

**Carl** – I guess I need to refine my question a little more before I move on with this but I am a little unsure about this approach, and I am tending to agree with that previous suggestion. The second question...

**Paul** – The intent here is to create some additional strings, if you will, on transfers but not to prohibit them.

**Carl** - The second question was that in section *d* under the transfers, paragraph *d* shall be considered significant under 1708.09 for the purpose of antidegradation review, will that also require a change to antidegradation provisions because it specifically exempts unless it is a 20%. I forget exactly, but it seems to me that the antidegradation review specifically exempted this situation under certain circumstances and this intends to make it apply so I didn't know if that would also require the antidegradation to...

**Paul** – We have one more thing to do before we segway into antidegradation. There are two antidegradation cases. One is insignificant and the other is significant. Significant requires full public participation before the decision is made that there is social and economic justification. If it is insignificant, it doesn't. The intent here is that transfers will be significant, so they will require full public review.

**Carl Paulsen** – Right, I thought it was the definition of significant but that made me think that it was specifically exempting that acceptance.

**Marjory** - – I don't see that it does.

**Bill Schroeder** – We have an item that time wise we are in trouble on but it was the comment that I made on Naturally Occurring Determinations Using Reference Conditions, the emails and so forth. I would like to make one comment on it. You may want to suspend further discussion of it to get back on schedule. Part of the point that I was trying to make is that if you take some reference condition lakes, lakes which we believe have not been impacted by human activity, and you say for some particular parameter  $x$ . Let's determine what the 25% and the 75% of the concentration of that is and we will define that as naturally occurring. I think that is the concept behind  $x$  that is naturally occurring. If then your lake falls within that 25 to 75 range it is naturally occurring and it would be meeting the standards for Class A lakes. The concern I have about that is that I think at least for some parameters there may be variations. Some lakes will be high and some will be low for natural reasons. There will be natural variations why some are high and some are low. The particular lake you are wondering about might be naturally low but if we have adopted by standard that these are our reference conditions, the 25% and 75%. The 75% for this particular element  $x$  is number of 50 then that becomes de facto the upper limit you are allowed to have on this lake when that might not be the natural condition of that lake. So what I am asking is a refinement. Wouldn't it be better to say for a particular lake where you are trying to keep the natural conditions, if you have a way to determine what the natural condition would be, that is it and that should be the standard. If you cannot figure it out, and you need to resort to something, then maybe you go to this reference condition and say that is the best I can do to determine what natural might be.

**Paul** – I think that is what we propose to do or at least a variation of that. If we are evaluating the natural condition and the lake is between 25 and 75, no problem. If the lake falls outside of that then in order to determine that there is an outstanding violation, we would need to do a further independent study that says yes it is outside of that, it is on the table for distribution, but it is nevertheless natural because of the characteristics of the watershed or something like that and we would go out and investigate and document that and we would do that either on the high or low end. That would be what we would propose to do and that is quite similar to what we do for bacteria violations.

**William Schroeder** – But there is still something in that, it sounds like we are saying, if the lake fell within the 25% - 75%, the presumption would be that it is natural and no further study would be done. If it were outside of that then you would do a study to see if it is unnatural, human impact or something, or is it natural for this particular lake. I am going a step further and I am saying that the lake might be at 75% and what we propose would say that this is natural. I would say wait a minute suppose that there is historical data that says that the natural condition for this lake really is to be lower at the 25%. Suppose there was some such data. I think that ought to be overriding. I think the 25 to 75% which you treat to if you can't but if you have some data for some modeling or some reason to say that for this lake it really should be lower. That is just as valid as if it really should be higher.

**Paul** – We could probably write that into the decision making process. I think in most cases we won't have that information but I think that would work.

**Marjory** – Does anyone have anything else to add?

**Vern Lang** – I agree with the comments that Bill just made but I had one additional question and that has to do with time of year that sampling takes place in these lakes in terms of phosphorus or other levels and where the samples are taken. Both of those conditions could conceivably make a difference in phosphorus concentrations particularly in the summertime and nothing in the winter. I would want to see some additional thinking and discussion about when to take samples and over what course of the year they would be taken and also where they are taken.

**Paul** – Can you sum that up in a written statement. When we say the phosphorus concentration in lake A is  $X$ . We are going to take that sample and label that sample as to when and where we take it and how many do we need before we obtain the concentration.

**Neil Chandler** – Do we put that into the rule or make a policy item?

**Paul** – For all of these things and for the upcoming nutrient standards, we are not proposing to change the rules. We are proposing to write translators which actually will go into the CALM, go into a document that describes the process by which we access waterbodies including how many samples, what kind of samples, where you take the samples etc. and that is how we would do it.

**Anthony Zuena** – You would follow that logic then. You would have to rethink the presentation you made last week on the reference data. You presented that information not as an example but as a uniform value. It wasn't seasonally dependent; it wasn't dependent on where in the lake you took it, it was just a value for the bench mark lakes with a reference point.

**Paul** – Bob can correct me if I am wrong. I believe in general we have an index period that starts around July 1st and ends around August 31<sup>st</sup>. When we do phosphorus we do an integrated sample of the epilimnion and that is where the numbers come from, generally taken at the deep spot, those would be the kind of specifications that Vern was asking for.

**Bob Estabrook** – When we did that analysis we just looked at the epilimnetic or upper layer sample, but it is true that if a lake is stratified, the phosphorus in the epilimnion is going to be different than that in the hypolimnion.

**Anthony Zuena** – I guess my own point of raising the issue is if you are going to use that reference data technique that the data that you use to build that has to be consistent with the thresholds, the target values you are going to expect proponents to measure up to.

**Paul** – Right. We agree with that. There needs to be sufficient specifications of how the samples are collected and so on so that we are not talking apples and oranges.

**Marjory** - On to Jaffrey.

#### **Discussion – Revised Draft Rule Language for Turbidity and Time-dependent Modeling**

**Paul** - Moving on to the proposal for turbidity and application criteria computations for establishing discharge permit limits. Please cross out the nutrient section of the transfer of water. We made one change which I don't think is significant to the turbidity part in which we took out the section that nearly repeats the statutory requirement. The reason we did that is because the rule making manual says don't repeat the statutory requirement unless there is some very good reason.

**Marjory** – So we have to take it out anyway. Does anyone have a problem with that? I thought we were going to do the rules first.

**Paul** – Lets do the rules first and then we will talk about Jaffrey. I am sorry. We are switching the order of the agenda.

**William Beckwith** – Paul a little plug here may be actually aside from the topic at hand but one good reason, and I am not saying you should, would be the whole of what are your water quality standards with the lakes and ponds through time EPA comments frequently that it would be nice if somehow you adopted some approach of making it clear what the body of the standards are and maybe even today go but maybe not, but if somebody asked for your standards, they get the standard correct. Not the statute also.

**Paul** – They need the statute also and they also need our translators for guidance or they will as soon as we get them.

**William Beckwith** – As you move forward in packaging.

**Paul** - Any comments on turbidity? Moving on to application criteria for concentrations for establishing discharge permit limits. The only thing that is changed here is the change that we said we would make last time in which the words in *a* and *b* for the duration considerations for toxic substances for acute and chronic. The words have been changed to coincide exactly with what is in the technical support document. Any discussion on those?



### **Jaffrey Cu Modeling Example**

**Paul** – Moving on to the Jaffrey discussion. We had promised last time to work with Jaffrey and come up with a summary of how the Jaffrey situation might apply. How the rule change would apply to the Jaffrey situation. There is a copy which includes some additional input from the Wright Pierce folks which was handed out at the meeting. The E-mail copy is no longer valid. The correct copy should say the average daily flow should be 1.25 not 1.2. We had that discussion with Jaffrey and we worked through a scenario that they believe they want to use as a basis of design. Basically the scenario is this would be a time dependent modeling situation in which the concentration in the copper in the affluent would vary with time and the concentration of copper in the receiving water would vary with time, and the discharge would be assumed to be constant and at the maximum value. Actually it would vary with time, it would either be assumed to be constant at a maximum value of 1NH<sub>3</sub> or it would be assumed to be constant at zero the proposed copper discharge when the river is below a trigger point. Basically the time dependence concentrations, we are still talking about that, but in general the literature assumes one or more distribution and getting enough data to be able to estimate the parameters of that distribution and we could use that in estimating the concentration on a daily, timely increment in both the affluent and the receiving water. I think that is it in a nut shell. Any questions? ...

**Vern** – Paul could you work up a scenario, if you made the assumption that 7cfs was the 7Q10.

**Paul** – 7Q10 is not a term that we would like to use at all when talking about time dependent modeling.

**Vern** – I know, this is just for me to make this situation so that I can understand what the differences are. If you made the assumption that 7Q10 was 7cfs and also the assumption that there would be no discharge below 7cfs at any time, instantaneously, what would that permit limit be? Then I would have something to be able to contrast.

**Paul** – 7Q10 value is 3.33 at discharge, so that has been estimated and that is the value within reason.

**Jim Donison** – Vern what do you mean, did you say what would the permit look like?

**Vern** – Yeah

**Jim** – Relative to what, the numbers for what? Are we talking about metals or are we talking about BOD?

**George Berlandi** – Normally the way we do it with the 7Q10, facilities are allowed to discharge year round, all the time. This one here they wouldn't be discharging below the trigger flow in this particular case at 7cfs. What it does do is it gives us the advantage of protecting that acute and chronic criteria, the 1B3 flow and 4B3 flow. So on one hand you have an increase in the discharge of pollutants, but on the other hand you have as a protection against violating the acute and chronic criteria.

**Vern** - That would be using the steady state, 7cfs as steady state.

**Victor Krea** – Trigger flow of 7cfs. And the increase is directly related to the increased delusion factor, of course. What George didn't say is that with that 7cfs scenario, there would be 124 days per year when we would not be discharging anything during the year.

**Carl** – Under here the second cfs where the 7Q10 is 353, I was....

**Paul** – Again, 7Q10 does not apply to a time dependent modeling situation. What apply are the words in the rules which are the length of time that the chronic and acute state can be exceeded.

**Carl** – But someone could propose to do a dynamic model with 7Q10 as their cut off, which is what Vern was suggesting, and then would they get higher or lower limits and they probably would get higher according to George but that trade is offset by the fact that they can't discharge below 7Q10 which if you are doing steady state you can.

**George** – I think that if someone was to do a true dynamic model, you could discharge year round doing flows.

**Carl** – No but I said if, Vern's suggestion was what would happen at 7Q10 if you propose not to discharge below that. Since 7Q10 is kind of that standard that we say we are trying to meet through the steady state.

**Paul** – No, 7Q10 is an approximation of the time criteria that is universally accepted.

**George** – In this particular case, in Jaffrey's case, it is not a good approximation. The idea is the reality becomes if Jaffrey would get a permit with a 7Q10 flow, then you would have more exceedences of the acute and chronic criteria because of 7Q10 flow isn't high enough to protect that one exceedence every 3 years. So, with Jaffrey going to the trigger flow of 7cfs, that issue of the number of exceedences not exceeding one every three years goes away. I hope I made that clear. What happens is that everybody has assumed for years that the 7Q10 was extremely conservative and was protective of the criteria. The reality becomes in some situations or in many situations, depending on what you want to read, this is not always true. In this particular case with the information that we have at the Peterborough gauge, it isn't true. So looking at it from the protection of the acute and chronic criteria, we would be better served to have Jaffrey use the trigger flow then we would to develop a permit based on the 7Q10. There would no exceedences over the acute criteria because they won't be discharging below 7cfs.

**William Beckwith** – All things equal it should decrease the probability that there would be a criteria violation. So I am not clear, because of the terminology versus what I see on paper. What I see is the same steady state calculation that otherwise would be done at 7Q10 being done at 7cfs. I don't see a time dependent calculation whatsoever. So, the issue becomes most critically what you are actually doing.

**Paul** – The concentrations are in both the affluent and in the stream are time dependent, they have a log mean value and they have a variation about that log mean value that is not serially correlated and that means that you can estimate the concentration on any given day based on that distribution.

**William Beckwith** – Well that is true no matter what line flow in the steady state calculation. Where does this calculation become dynamic or time dependent or doesn't it because you talk about this stuff, but the best I can tell is that you are doing one calculation based with one set presumed conditions and then that would be the affluent limits that would have to be met at all times when they were allowed to discharge and then the other time they are not allowed to discharge. That is the only time dependent factor I see that is actually involved in the permitting. The insistence on call it time dependent keeps making me think maybe I don't ultimately understand.

**Paul** – You do understand, the difference is that we were explicitly saying that those things can vary with time. In the case we have described exactly how. You are right. The flow from the treatment plant can vary with time. It is either 7 or it is one.

**William** – In the calculation.

**Paul** – That varies with time.

**William** – In calculation?

**Paul** – Yes, if it is one on one day and it is zero on the next day, it is there.

**William** – Yeah, but it won't be zero or seven, it will be zero or whatever the daily flow is. Which is a factor of a flow standing discharge aside from the calculation you use to say what the permit limit will be and so what I see here is you are setting design parameters and doing one calculation as to what the permit limit is at any time that they are allowed to discharge. Is that correct?

**Paul** – Well I am not sure yet but in general yes. We might have a mean and a maximum, we might have a whatever.

**Victor Krea** – If it were that would there be a problem with this.

**William Beckwith** – If there were what?

**Victor** – If it were what you just described would that be a problem?

**William** – Just saying that we are not going to allow any discharge until a certain flow and then setting 1 set of limits to be met at all times, I think that is doable.

**George** – Is what you are saying is that it is not reflective of what this is saying, is that what you mean Bill?

**William** – I think that is doable, it is not reflective of some of this discussion. Some of this discussion would lead you to think that you are doing something else. But in fact your calculation is not taking into account any variability in affluent for receiving water flow or concentrations. Which is fine for what you have here in actuality but is that what you are proposing or are you proposing something else?

**Paul** - I think that is not a true statement. Flow is either zero or one that is variable. Concentration, when there is discharge, is log only distribute and it varies with time that is not serially correlated.

**William** – Other than the fact that you are prohibiting a discharge up and to a certain cfs are you planning on setting permit limits that vary with time?

**Paul** – No but we may set permit limits that have something to do with understanding of how the concentrations vary over time. But the permit limits are going to say don't discharge when it is below 7.

**Carl** - Are you suggesting that they can vary their discharge concentration over time is that what you are getting it?

**William** - I presume that, as it does now, and as it would under any calculation that I am aware of because of the variability of their influent and all, their discharge concentration will vary with time, the objective of the permit limit is to make sure that within variability you don't exceed, it doesn't above a certain level that is necessary to protect the situation in the stream.

**Carl Paulsen** – I was asking did that permit limit vary with time, is that what this allows?

**Neil Cheseldine** – No, we are not asking that for this instance but it may allow that for another instance.

**Carl** – Well that is what I want to know. Is this language going to allow that?

**Neil** – This may not be the best example of where the full extent of where these regulations could be used.

**Andrew Serell** – One axis is copper concentration and what is the other axis?

**Paul** – Time.

**Andrew Serell** – In terms of the concentration of copper various over an hourly basis based on historical data, is that what you are getting...

**Paul** - On a daily basis?

**Andrew** – Then you collect data that shows basically what our copper concentration has been on various days?

**Paul** – Yes, you have to have enough data to be able to figure out what kind of a distribution it is. This example is one way of using those words. You are right it may be a stretch to call this time dependent. That is how we got started with the whole discussion. There are a lot of other ways to use these same words in order to allow time to enter into the model. Remember that the purpose of the model is just to estimate that water quality standards will be met. Which means you can assume a worst case in a model and if your worst case meets water quality standards, the rest of the time, you are fine.

**William Beckwith** – Okay, but Paul, the calculation just does one steady state calculation of what permit limits would be whatever variables you put in is not estimated the probability of exceeding the criteria. I mean that calculation isn't a part of that anymore than if you use 7Q10 flow. Because the reality is at this point you are still showing us an example of steady state assumptions which do not test. You have increased the probability that you won't violate criteria by virtue of saying no discharge during a certain amount of flow, which is why I believe you can do that on the face of your standards as written. PC I and Jaffrey don't disagree with that.

**Paul** – I don't disagree with that. I don't disagree with that and Jaffrey doesn't disagree with that.

**William** – But just realize this is still a steady state calculation that is not analyzing the statistics around duration and frequency of exceedence.

**Marjory** – So just don't call it time dependent.

**William** – That is factual. Unless you do that calculation you haven't.

**Paul** – When we get around to writing the permit, we will have further discussions on that but the fact is that the criteria that have to be met are duration and frequency of exceedence.

**William** – This is not showing us a calculation that is testing whether that is true for this site.

**Paul** – What I am representing is that it will be done in the process.

**Marjory** – For whatever final minutes we have left.

**Paul** – What we are hoping here is that the words that we propose to use for the rule language have been worked over enough so that everyone is comfortable with them and that we can proceed with rule making.

**Carl Paulsen** – I don't know based on this discussion. I am not comfortable with this whole question that Bill has raised about whether you are talking about a steady state.

**Paul** – We are not talking about steady state. Steady state does not have time in the equation used in the estimation.

**Carl** – A single permit does.

**Paul** – If you can draw a graph of a parameter that is using the information and the graph looks like this with time on the horizontal axis, and the concentration parameter process, you are not talking about steady state you are talking about something that varies with time. We are talking about something that varies with time. Both concentrations here are effluent and river. Steady state has no time and the graph of a steady state condition is a horizontal line.

**Carl** – But the phi on the line refers to that permit limit that you set. That is the question that I am really stumbling on here.

**Paul** – We are talking about the modeling conditions, the assumptions that are made in using a model calculation to estimate whether or not water quality standards will be met in the receiving water. Permit limits are the result of all that process. What the rules apply to is the model itself and the calculations that are used to make that estimation. What I am saying is that the calculations that we are talking about here are time dependent because the graph looks like this with the concentrations in both the effluent and the receiving water.

**William** – Can you play that example out and show us this example, which again is based on a set of set-in-time assumptions and then play out the example where you would be actually looking at the variability of the affluent in the receiving water flows in concentrations and doing that calculation. That is not this calculation. That is what I was trying to get out, whether you were doing that or whether you weren't doing it here. Just so we understand what you are doing.

**Carl** - We do need to wrap up but that doesn't mean that I am comfortable with this.

**Marjory** – It is now 3:35 pm, do we have one more thing you want to talk about, like when the next meeting will be?

### **Introduction Discussion on Antidegradation Rules**

**Paul** – Everybody received a copy of the antidegradation rules, pieces of the rule that deal with antidegradation.

**Marjory** – Yes.

**Paul** – I would like to just go over a couple of things if we can stay for a couple more minutes just so when you read these you can focus on stuff.

**1708.1 b** – For significant changes in water quality, the word significant is very important.

Go down three lines it says after full satisfaction with intergovernmental coordination and public participation provisions, that is also very important. That is a basic difference between significant

which is **b** and insignificant which is **c**. You have a significant change in water quality you have full governmental participation and if you have an insignificant change the department gets to make all the decisions. It doesn't have to do any of that. Looking at **d** it is important that outstanding resource waters, **and I will bring in a map next time to show you where they are.** There is a higher standard for outstanding resource waters. Outstanding resource waters we have two categories, national forest waters and national forest lands and waters in the national segments of designated rivers.

**1708.07 a** – Which says basically, the except clause which says that high quality waters shall be maintained except for insignificant changes in water quality as determined by the department shall be allowed. So there is an exception to the maintain clause and if you go over to **1708.09** that describes the process by which the department determines what is significant and what is insignificant. So that is an important section to read over.

**George Berlandi** – Carl on the **1708.09** if you look under **d** you will find that it isn't just the 20% that can be determined significant. There is a caveat here that says that basically the department can determine something to be significant even though it is less than 20%.

**Paul** – I think that is it. We would like to take up a more detailed discussion of this next time. Also something that didn't get into your packet but I think it was handed out, The Clean Water Act Provision from which this state rule arises. I think the results of the discussion will be a guidance document by the department which will describe in greater detail how these rules will be implemented. There are a lot of things left unsaid.

- **Paul – I think the burden on members of the committee to supply information relative to cultural eutrophication and how that might be handled differently or definitions of waste if you would like us to do something different with those.**

## **Other Business**

### **Next Meeting Date:**

September - Tuesday, 14<sup>th</sup> at 1:30 pm at DES if we can obtain a room.

- **Marjory – Do I have a motion to adjourn? Vern moved to adjourn and Carl seconded the motion.**

## **Meeting Adjourned**

Adjourned at 3:40 pm